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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/039,481
Filing Date: January 08, 2002
Appellant(s): ALMOG, YAACOV

James E. Lake
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11 August 2009 appealing from the Office action mailed 22 May 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 47-58, 63, and 65-74 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claim 47 describes an electrostatic imaging process comprising forming a charged latent electrostatic image on a photoconductive surface and applying to the photoconductive surface a liquid toner. The liquid toner comprises an insulating non-polar carrier liquid, at least one charge director; and toner particles dispersed in the carrier liquid and the at least one charge director. The toner particles comprise a core material comprising a pigmented polymer, which is unchargeable by the at least one charge director or which is weakly chargeable by the at least one charge director (emphasis added). A coating of at least one ionomer component in an amount effective to impart an enhanced chargeability to the toner particles is present on the unchargable or the weakly chargeable toner particles. The claims then specify the ionomer coating increases the chargeability of the toner particles to greater than 7 pmhos/cm (emphasis added).

Independent claim 63 is directed to liquid toners of first and second colors having the same components present and relationships as presented in claim 47.

The dependent claims specify additional features of the claimed method and liquid developer, such as useful charge directors (claims 51-55), characteristics of the ionomer coating (claims 56-58), the relative increase in the chargeability brought by the coating (claim 65) or a charge in polarity charge (claims 66 and 69), and specific numerical ranges for the chargeability increase (claims 67, 68, and 70-74).

The specification as filed does not describe the claims as presented because 1) the specification does not disclose a conductivity for the toner to greater than 7 pmho/cm for unchargeable or weakly chargeable particles, 2) does not describe any numeric conductivity values for unchargeable particles, and 3) does not disclose the conductivity increase numerical ranges for those having an unbounded upper limit even where the lower limit is described.

The claims include within their scope embodiments not disclosed by the specification, such as conductivity increases for weakly charged or unchargeable toner particles to just greater than 7 pmho/cm (e.g., 7.01 pmho/cm), increases of significant value (e.g., 1000 pmho/cm, 10,000 pmho/cm, etc.), and numeric increases for uncharged particles.

None of the evidence in the specification describes a conductivity of greater than 7 pmho/cm as currently claimed. A single comparative example shows that a conductivity of 7 pmho/cm for a weakly charged toner is not desired (Table 5, Run No. 1), but this comparative example in combination with the specification disclosure does not show that any conductivity greater than the comparative is appellant's invention. Further, none of the changes in charges for the specification toners were relative to an unchargeable toner particle in the liquid developer because the evidence only shows uncoated particles were weakly charged.

A review of the specification shows that the only numerical values for an increase in chargeability is Tables 3, 4, and 5 (specification pages 12-14). A review of the specification shows in Table 3 an increase in particle conductivity of 112 pmho/cm between Run No. 1 and

Run No. 2 (115 – 3 = 112) for the weakly charge particle in a liquid carrier having a charge director. Run No. 1 has no ionomer and is weakly charged while Run No. 2 has 5 % ionomer based on the toner solids. Additional the toners in Run No. 3 and Run No. 4 show an increase in conductivity of 159 pmho/cm (162 – 3 = 159) and 161 pmho/cm (164 – 3 = 161), respectively, as the ionomer concentration is increased to 10 weight % and 20 weight % solids, respectively.

Specification Table 4 shows an increase in conductivity of 15 pmho/cm for the CAP charge director-containing liquid toner (17 – 2 = 15) and a 23 pmho/cm absolute value increase in conductivity with a change in polarity for a BAP charge director-containing toner. Using the same approach, the addition of 10 weight % of a different ionomer in Table 5 shows an increase in particle charge of 79 pmho/cm ((98-12) – (12-5) = 79) while the addition of 20 weight % ionomer in Table 5 shows an increase in particle charge of 96 phmo/cm ((115-12) - (12-5) = 96).

The specification as filed fails to disclose the claims as presented.

With respect to the dependent claims, various ranges of conductivities are presented, but none of the changes in charges were relative to an unchargeable toner particle in the liquid developer because the evidence shows all particles were weakly charged without the ionomer. There is no basis for the newly presented range as being the increase in chargeability relative to an uncharged toner particle. Additionally, dependent claims 67, 69, and 70 present unbounded upper ranges for the increase in conductivity, which are not supported for the reasons given above.

(10) Response to Argument

In the Brief, starting on page 6, appellant takes the position the specification supports an increase in chargeability to a lower limit of 7 pmho/cm. Appellant notes non-ionomer coated

particles (i.e., comparatives) have particle conductivities of 1, 2, 3, and 7 pmho/cm in various examples. Appellant relies on these comparatives and on the general description in the specification that the invention relates to enhancing the chargeability of weakly chargeable toner particles. The Tables all show where the chargeability is increased. Appellant also notes, "ordinary skill may easily interpolate between data points or extrapolate from the last data point to determine an amount of ionomer sufficient to produce a desired particle conductivity greater than that shown for 0 % ionomer." Appellant also states that amounts of ionomer different from 5%, 10%, and 20% as shown are "clearly contemplated".

Although the Examiner agrees with some of the findings of fact presented by Appellant, the Examiner does not agree with the conclusions drawn from these findings. The specification does disclose comparative, non-ionomer coated toner particles with particle conductivity of 1, 2, 3, and 7 pmho/cm. The specification does disclosure than an ionomer coating will increase the charge on a weakly charged toner particle. The specification does disclose specific conductivities for ionomer concentrations of 5%, 10%, and 20% by weight of toner solids, as shown above. However, the specification does not describe that a liquid toner conductivity of any value just greater than a comparative toner's conductivity and up to any conceivable value is the invention. To the contrary, the specification teaches specific numeric values that are obtained using weakly charged particles as the toner core. Contrary to appellant's assertion, the disclosure of what is not the invention does not provide a description that anything else is the invention.

The Examiner also disagrees that the ability to easily interpolate between data points or extrapolate from the last data point to determine an amount of ionomer sufficient to produce a desired particle conductivity greater than that shown for 0 % ionomer provides a written description of the claimed invention. Contrary to appellant's position, the specification data

shows that the addition of ionomer is not a clear relationship of weight to conductivity. As seen in Table 3, for a weakly charge toner at 3 pmho/cm conductivity an addition of 5 weight percent ionomer coating increases the conductivity 3700% over the uncoated weakly chargeable toner particle. Doubling the coating weight percentage to 10 % increases the conductivity about 41 % over the 5 weight % coating. Doubling the coating weight again to 20 weight % increases the conductivity about 1% over the 10 weight % value. The relationship between these values is not straightforward – linear or logarithmic – and the artisan would not be able to easily interpolate between data points or extrapolate from the last data point to determine an amount of ionomer sufficient to produce a desired particle conductivity. The specification also speculates that irregularities in the coating may diminish the effectiveness of a given coating weight, but provides no description or clear guidance on this effect. No description is provided in the specification that an increase in conductivity of just greater than 7 pmo/cm to weakly charged or unchargeable toner particles is the invention.

It is apparent from appellant's remarks that the enablement provision of section 112, first paragraph, is being used to allege that the specification meets the written description provision of the same section and paragraph of US Code. As the BPAI will readily appreciate, there is a difference between these provisions of section 112. The routine experimentation that the artisan is expected to perform with respect to enablement does not equate to a written description requirement under section 112, first paragraph. Although the artisan *might* be able to produce some conductivities as claimed, there is no written description of the claimed toner conductivity in the claimed method and developer. The written description requirement and the enablement are distinct and the ability to meet one requirement (which is not necessarily agreed with) does not equate with meeting the other.

Further noting Appellant's remarks on Brief page 10, the unbounded upper range of the claimed conductivity is clearly not described by the specification as evidenced by Table 3, described above. As seen there, doubling the amounts of the ionomer rapidly increases conductivity, but the effect quickly dissipates as more ionomer is added. The artisan reviewing this data would not see any amount of toner conductivity as producible or that this is described as the invention. To the contrary, the specification evidence *suggests* the increase in conductivity reaches a limit at near about 164 pmho/cm. Tables 4 and 5 each produce conductivity improvements less than in Table 3, which has the increase near about 164 pmho/cm. The claims, however, permit any numerical value in conductivity greater than 7 pmho/cm. The artisan reviewing the specification would not perceive or understand this as the Appellant's invention because the evidence suggests that the conductivity reaches a limit near about 164 pmho/cm.

As with the approach taken concerning basis for the lower limit of greater than 7 pmho/cm, appellant is taking the same approach on Brief page 10. Here, certain conductivities are described as conceivable, and Appellant postulates on the factors that would produce them (see Brief p. 10, last paragraph). In response, the Examiner again notes that conjecture in the Brief on what might be possible or what might work for a given toner or method using the toner does not show a written description of the invention in the specification. Appellant states that "the embodiments described in the specification are not limited to any particular upper boundary for particle conductivity." This simply is without basis because each of the inventions summarized in Tables 3, 4, and 5 are indeed limited to certain conductivity ranges. The Examiner is not attempting to deprive appellant of invented subject matter, as is asserted. Rather, the Examiner is uniformly applying section 112, first paragraph, which states that specification shall contain a written description of the invention. This section of Code places a

requirement on the inventor that the disclosure of the invention is consistent with the protection obtained. This provides a benefit to the patent applicant through an enforceable right and protects the interests of the public by a full disclosure of the invention.

On Brief page 11, appellant is understood to take the position that the claims provide a written description for the claimed conductivity of greater than 7 mho/cm for unchargeable toner particles because this range is described for the weakly charged charged particles and because the specification discloses enhancing the charge on both weakly charged charged particles and uncharged particles. Further, appellant states that there is no reason to conclude that the Examiner's "apparent assumption that the physical principles described in the specification would be any different for unchargeable particles than for the weakly chargeable particles used in Tables 3-5. Since the specification expressly encompasses using unchargeable particles, it follows that the descriptions of enhancing chargeability apply to such particles."

As discussed above, the specification only provides numerical conductivity for weakly charged particles. The comparative that appellant uses for basis of the lower limit of the claimed toner conductivity is a weakly charged particle, as seen in Table 5, Run No. 1. There is simply no description of this lower conductivity for an unchargeable toner. In fact, Appellant's position is not well taken because the unchargeable particle would have to have a conductivity of zero pmho/cm. It is uncharged. There is no basis, therefore, to select a lower limit of the claimed chargeability at greater than 7 pmho/cm for unchargable particles due to the ionomer because uncharged, non-coated particles could not have a conductivity at 7 pmho/cm. Action of some additional, undefined component would have top be present to give a charge greater than zero pmho/cm for an uncharged particle. Even following Appellant's rationale, the claims are not described.

Clearly the specification does not provide a written description for the claimed method and developer where the toner particles are unchargeable and are charged to greater than 7 pmho/cm by the ionomer coating. The unbounded upper range is also not described by the specification for the unchargeable particles because there is no disclosure of such particles' numerical conductivities in the specification at any value, certainly not for an infinite range.

. On Brief page 13, various dependent claims are specifically discussed. Initially it is noted that the heading on page 13 is for a rejection under section 112, second paragraph, but it is apparent from the Brief that Appellant is properly addressing the section 112, first paragraph, rejection.

Appellant takes the position that claims 67 and 70 have written description in the specification because the unbounded upper range is supported by an understanding that higher conductivities can be obtained with amounts on ionomer greater than 20 weight %. For the sake of brevity the Examiner relies on the remarks above that the artisan giving the specification a fair reading would find that the specification evidence describes an increase in conductivity up to an upper limit at 164 pmho/cm for a weakly charge toner particle. Although the lower limit of 15 pmho/cm is described, the evidence shows that the conductivity increase is not directly related to the amount of ionomer coated because it appears to reach a maximum near about 164 pmho/cm. There is no reason to believe the specification discloses an unbounded upper range of conductivity as presented in claims 67 and 70.

On Brief page 15, Appellant takes the position that the conductivity range of at least 15 pmho/cm is proper for uncharged toner particles. Again, the Examiner must refer to the specification, specifically Table 4. This table shows a conductivity of 15 pmho/cm for ionomer-coated toner particles, but these toners have a charge of 2 pmho/cm when not coated. They

are weakly chargeable toner particles. Consequently, they cannot provide basis for a numerical limitation where the toners are claimed as being unchargeable.

On Brief page 16, various dependent claims are specifically discussed. Initially it is noted that the heading on page 13 is for a rejection under section 103(a), but it is apparent from the Brief that Appellant is properly addressing the section 112, first paragraph, rejection. There are no art rejections of record.

Appellant specifically addresses claims 68 and 71-74 and argues that the specification provides a written description of the claimed range of conductivity for the uncharged toner particles. To avoid repetition, the Examiner relies on the remarks above. In summary, the claimed conductivities are only shown for weakly charged toner particles that are coated with an ionomer. There is no description of these numerical values for uncharged toner particles.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Christopher RoDee/
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/Mark F. Huff/

Supervisory Patent Examiner, Art Unit 1795

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